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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,750

08/17/2006

Ichirou Ishimaru

128047

9836

25944 7590 02/01/2008

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EXAMINER

LYONS, MICHAEL A

ART UNIT

PAPER NUMBER

2877

MAIL DATE

DELIVERY MODE

02/01/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,750	<b>Applicant(s)</b> ISHIMARU ET AL.	
	<b>Examiner</b> MICHAEL A. LYONS	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>081706</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimaru (JP 2002-243420) in view of Mikkelsen et al (6,600,560).**

Regarding claim 1, Ishimaru (Fig. 1) discloses a system for geometric measurement and analysis of a three-dimensional object, comprising a variable phase filter having a fixed reflector 20 and a movable reflector 19 whose position can be changed along an optical axis; a separating optics 17 for guiding zero-order light to the movable reflector or the fixed reflector and higher-order diffraction light to the fixed reflector or the movable reflector, where the two kinds of light come from each point of a target object 13 irradiated with light from light source 11 (see abstract, for example); an interference optics system comprising half mirror 17 and lens 21 for

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guiding the reflected zero-order light and the reflected higher-order diffraction light to substantially a same point; a photo-receiver 22 for measuring a strength of an interference light; and a position-determining and analyzing unit (not shown in the figure, but inherent to the operation of the device) that determines apposition of each point of the target object in a direction of the optical axis (see, for instance, Figure 3), on the basis of a change in the strength of the interference light measured by the photo-receiver, while moving the movable reflector along the optical axis (again, see abstract, for example).

Ishimaru, however, only discloses that the light source 11 is homogeneous (see paragraph 0018), and fails to explicitly claim that the light source provides low-coherent white light.

Mikkelsen discloses an optical measurement system that uses a light source such as a halogen lamp. There is also a lens arrangement that images the filament of the halogen lamp in the aperture stop, which results in a homogenous light-source volume with a broad spectral range from 190 nm to 800 nm that is continuously available for measurement purposes (see Col. 4, lines 30-38).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a white light source for the homogenous light of Ishimaru as per Mikkelsen, the motivation being that, as shown in Mikkelsen, a white light source can be used to provide homogenous light to a measurement system.

As for claim 2, see element 19 of Ishimaru.

As for claim 3, the light source 11 of Ishimaru provides light to ring slit 12 which generates annular light. Accordingly, the variable-phase filter has an annular form to properly filter the light (see Figure 2, for example, and paragraphs 0018 and 0021).

As for claim 4, Ishimaru provides lenses 15 and 21 for providing light to the object and to the detector, respectively, in spot like form.

As for claim 5, Ishimaru discloses that a piezo-electric element can constitute a drive 203 for the movable reflector of the variable-phase filter.

As for claims 6-8, the embodiment of Figure 13 of Ishimaru allows for measurement of the motion of the movable reflector.

As for claim 9, see Figure 1 of Ishimaru.

As for claim 10, see Figure 12 of Ishimaru.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. LYONS whose telephone number is (571)272-2420. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael A. Lyons/  
Primary Examiner, Art Unit 2877  
January 28, 2007